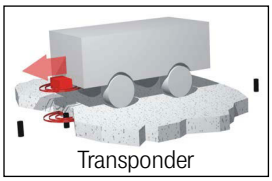
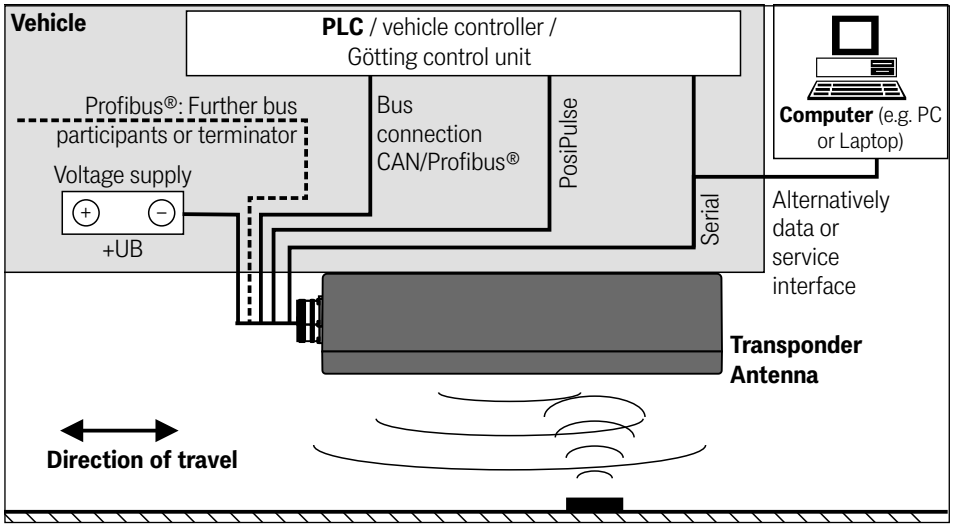
Data Sheet

Photo shows variant
HG G-98780XA



Transponder

Functional Description



The transponder antenna is used for the localization and tracking of rail-mounted cranes with the aid of ground marks (transponders). The antenna described here is particularly suitable for vehicles outdoors, as the electronic units are encapsulated in the antenna housings. It operates on the frequency 13.56 MHz and thus has a large frequency separation from sources of interference such as drives, converters and switching power supplies. All important settings, adjustment work and software updates can be carried out via a serial interface.

When the antenna passes over a transponder, the transponder is supplied by an energy field of 13.56 MHz and transmits its code back to the antenna by modulating this frequency. The interpreter integrated in the antenna decodes the code.

When the center of the antenna is crossed (at right angles to the direction of travel), a high-precision positioning pulse (PosiPuls) of adjustable duration is output.

Furthermore, various characteristics of the antenna – such as current consumption and supply voltage etc. – are measured and added to the serial output protocol on request.

The serial signal is output as a potential-separated RS 422 or RS 232. The positioning pulse is also galvanically isolated. Further interfaces are CAN-Bus or Profibus®. An overview of the available variants of the antenna is given in the corresponding table on the right side.

Overview

- Transponder antenna for rail-mounted cranes
- Encapsulated electronics
- Indoor & Outdoor, IP 67
- Frequency range: 13.56 MHz (large frequency distance to interference sources)
- Reading antenna <–> transponder 50 to 90 mm
- Active area for positioning 280 x 90 mm
- Max. crossing speed 8 m/s
- Voltage supply 24 V ±10
- Bus interface: CAN or Profbus®, see table of variants
- PosiPulse when crossing the center of the antenna in driving direction
- Serial interface serves as service interface for configuration or data interface
- Programming of transponders

Variants HG G-98780

	Profibus	CAN	RS422	RS232
ZA		X	X	
YA	X			X
XA	X		X	
WA		X		X
UA	As variant XA but with cable tails, see table "Complementary products" on the back.			

Götting Product IDs (order codes)

HG G-98780ZA

- Production series (no functional relevance)
- Functional Model / Version
- Identification Number / Type
- G: Device | K: Component | S: System | W: Software
- HG: Götting | HW: Resale

Date: 25.09.2023 | Revision 01 / English | Author(s): RAD / GW
Product page: http://goetting-agv.com/components/98780

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Mounting Notes

- In the housing of the antenna there are preparations for four M5 screws (see adjacent picture).
- Keep the mounting space around or above the antenna “metal-free” with a distance of 80 mm.
- Transponder track centered under the antenna (max. ±4 cm tolerance).
- When used at temperatures below 0° C, use the built-in heater.
- Only max. one transponder at a time in the detection range of the antenna. Minimum distance between transponders therefore 500 mm.

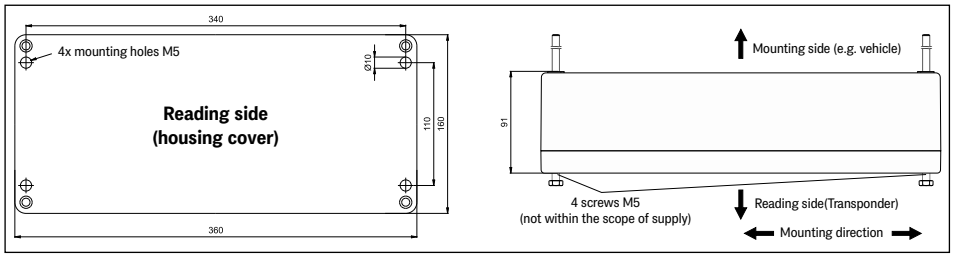
Bus Interface

- CAN bus (HG G-98760ZC/WC): according to ISO/DIS 11898, identifier, data rate, basic/extended CAN, configurable via serial interface
- Profibus® (HG G-98780YC/XC): According to DIN 19245 / EN 50170
  Autom. baud rate search, supported baud rates: 9.6kBd, 19.2kBd, 93.75kBd, 187.5kBd, 500kBd, 1.5MBd, 3MBd, 6MBd, 12MBd, LED for Profibus® state “data exchange”

Complementary Products

CONSET00001	Profibus® vonnector set M23 incl. terminator *)
CONSET00002	CAN connector set M3 *)
Connector set for antenna HG G-98780UA *)	– 1x cable tail 4m Power/ serial interface One of the following options: – Antenna is last Profibus® device: 1 x Profibus® cable & 1 x Profibus® Terminating Resistor permanently installed in the device – More devices follow on the Profibus®: 2 x Profibus® cable
HG Z-09878ZA	Not for UA: Profibus® connection cable POWER, connector M23 on one side, other side open, specify length
HG Z-09879ZA	Not for UA: Profibus® connection cable, connector M23 on one side, other side open, specify length
HG G-70661XA	Puck Transponder
*) = supplied with the matching antenna variant	

Housing Dimensions (without connectors) / Mounting Arrangements



Pin Allocations

Typ	CAN – M3 Socket		Profibus® – M23 Socket / UA: Cable tail				
Connector			X1 + X2		X3		
Variant	ZA	WA	YA + XA	UA	YA	XA	UA
1	+Ub (Antenna)		Signal Ground	<– Shield	+Ub (Antenna)		<–
2	GND (Antenna)		Line A	<– Green	GND (Antenna)		<–
3	+Ub (Heating)		–		+Ub (Heating)		<–
4	GND (Heating		Line B	<– Red	GND (Heating)		<–
5	+RX RS422)	RX(RS232)	–		RX(RS232)	+RX(RS422)	<–
6	-RX(RS422)	–	+5V Signal		–	-RX(RS422)	<–
7	+TX RS422)	TX(RS232)	+Ub / 0,6A (Ant.)		TX(RS232)	+TX(RS422)	<–
8	-TX(RS422)	–	GND (Antennq)		–	-TX(RS422)	<–
9	+PosiPulse		Shield		+PosiPulse		<–
10	-PosiPulse		–		-PosiPulse		<–
11	CAN+		–		–		<–
12	CAN-		RTS		Signal Ground		<– Green yellow
Casing	Shield						

The pin numbers are printed on the connectors. On Götting cables, the pin numbers are attached to the strands.

Technical Data

Dimensions	360 (without connectors) x 160 x 91 mm (L x B x H)
Casing	Glass fiber reinforced polyester
Weight	approx. 6 kg
Effective antenna area	280 x 110 mm (positioning range)
Reading distance	50 to 90 mm
Voltage supply	24 V ±10 %
Current consumption	approx. 600 mA, during transponder programming max. 2A for 500 ms, about 2A heater
Temperature ranges	Storage and operation: -25° C to +50° C with heating Warm-up time heating: approx. 60 min at -20° C Turn-on temperature heating: 0 to +5° C
Protection class	IP 67
Relative humidity	95 % at 25° C (without condensation)
Mechanical load capacity	5 g 11 ms / 2 g 10 to 55 Hz
Max crossing speed	8 m/s
Positioning accuracy	depending on the reading height, see device description
Connection	– HG G-98760ZC/WC: 1x 12 pin M3 female connector Power & CAN-Bus – HG G-98760YC/XC: 3x 12 pin M23 female connector, 1x Power, 2x Profibus® – HG G-98780UA: 3x cable tail 4 m / 2x cable tail 4 m + Profibus® terminating resistor
Interfaces	– output with 9600 or 19200 baud; Content of telgram adjustable; procedure 3964R or transparent can be chosen as protocol – CAN resp. Profibus®: s. box in the left sidebar – PosiPulse: 24 V 20 mA power source, isolated